

Cellular radio technology was invented in the late 1960s. **"In** 1977, developmental cellular systems were authorized in Chicago and Washington/Baltimore. From 1979 to 1982, the Federal Communications Commission (FCC) finalized its rules authorizing the cellular service, and on October 13, 1983, the first commercial cellular system in the country began operation in **Chicago."**²

II. INDUSTRY STRUCTURE

The performance of an industry depends upon the conduct of sellers in such matters as pricing and non-price competition. Sellers' conduct depends in turn upon the structure (i.e., number and relative size of firms) of the industry in question. This section will focus on the demand for cellular service, the number and size distribution of providers of cellular service, and substitutes for cellular services.

A. Demand

The U.S. cellular telecommunications industry has experienced steady growth which is represented by the

² State of Cellular Industry, Cellular Telecommunications Industry, Cellular Telecommunications Industry Association, Spring 1990, p. 62.

increase in the number of subscribers and the number of **U.S.** systems in operation.³

<u>Year</u>	<u>U.S. Subscribers</u>	<u>Percentage Growth</u>	<u>U.S. Svstems</u>	<u>Percentage Growth</u>
1984	92		32	
1985	340	270%	102	219%
1986	682	101%	166	63%
1987	1231	80%	312	88%
1988	2069	68%	517	66%
1989	3509	70%	584	13%

Growth has traditionally come from the addition of new systems **but "1989** marked the first year in which the majority of the expansion in subscriber levels came from the continued growth of older established markets, rather than the addition of new systems". "Experts predict that the expansion of cellular will continue its rapid pace for years to **come.**"⁴

Economic theory asserts that demand for a service is likely to be elastic where (1) the outlay involved is a **sizeable** part of a consumer's total expenditures; (2) a customer's need for the service is not urgent; (3) close substitutes are available; and (4) the service has multiple uses. Cellular telephone service appears to fit these characteristics. Cellular service **may** represent a **significant** expenditure for many customers, especially a

³ Ibid., p. 4. --

⁴ Ibid., p. 2

small business or non-business customer; many customers could easily do without the service by using conventional two-way radio telephone service, paging, or public payphones; and cellular service has a potential for multiple uses if the prices are reduced.

B. NUMBER AND SIZE DISTRIBUTION OF CELLULAR TELEPHONE PROVIDERS

Cellular telephone service is licensed by the FCC. When the FCC allocated portions of the radio spectrum for cellular service, the FCC decided that it would be in the public interest if there were two competing systems in each market area. One system would be operated by an **arm's** length affiliate of the telephone company in the area, and the other by an entity chosen from among competing applicants for the nonwireline **franchise**.⁵

"On January 1, 1984, in the midst **of cellular's** arrival in the marketplace, the Bell System broke itself up to settle an antitrust suit between AT&T and the Department of Justice. Within weeks of the breakup, the Bell regional companies realized that, now that each of them was independent of the others and limited to one region, one regional company would have neither the market **power nor** the incentive to stunt cellular growth in the other region's

⁵ "The Impact of Law and Regulation on Technology: The Case History of Cellular **Radio**", ~~Business Lawyer~~, Vol. 44, No. 3, May 1989, **pp-726-727**.

territories. The Bell regional companies, therefore, began acquiring **"nonwireline"** cellular properties outside their regions. The Justice Department, the FCC, and the courts agreed **that such** acquisitions were allowed by the terms of the Bell System breakup and under antitrust principles in general. Five Bell regional companies acquired approximately one-third of the nonwireline side of the cellular business outside of their respective **regions.**⁶ As licenses have changed hands the **"wireline"** and **"nonwireline"** distinction has blurred.

A similar event affected the Washington/Baltimore market when in late 1986, Southwestern Bell Corporation received permission to acquire the cellular and paging properties of Metromedia Telecommunications, Inc. Metromedia owned the Washington/Baltimore Cellular Telephone Company, the non-wireline carrier in the Washington/Baltimore market.

"Cellular mobile telephone providers are licensed by the FCC to operate in two types of service areas: Metropolitan Statistical Areas (**MSAs**) and Rural Service Areas (**RSAs**). The FCC based its licensing scheme on the **MSAs** defined by the Office of Management and Budget.. The 305 **MSAs** encompass approximately 75 percent of the nation's

⁶ Ibid., pp. 728-729.

population but only 16 percent of the land area. In order to license the non-MSA areas, the FCC divided them into 428 **RSAs**, with an average population of 150,000. Initially, potential operators went through a comparative hearing process where detailed applications were examined at length. After applications for the top 90 markets were accepted, the FCC announced that operators for additional markets would be decided by lottery. Applications for the remaining cellular markets increased dramatically. There were almost 100,000 applications for licenses in the MSA markets and 288,000 applications **for** licenses in the RSA markets. The FCC has licensed all the **MSAs** and has completed the lottery process for all **RSAs**.⁷

A list of the **MSAs** and **RSAs** located in Maryland is provided below. The markets are listed according to market size, with the larger markets listed first.

⁷ State of the Cellular Industry, p. 62.

MARYLAND⁸

<u>Market</u>	<u>Carrier</u>	<u>Status</u>
Baltimore	Southwestern Bell Mobile Systems	12/1983
	Bell Atlantic Mobile Systems, Inc.	6/1984
Hagerstown	Vanguard Cellular Systems	8/1989
	Hagerstown Cellular Partnership	G C P 11/88
Cumberland	Cellular Information Services	11/88
	Dr. Alan Smuckler	GCP 11/88
MD 1 Garrett	Northern Communications	Tentative Selectee
	Bell Atlantic Mobile Systems, Inc	Tentative Selectee
MD 2 Kent	FL Cellular Mobile Communications Corp.	Tentative Selectee
	Bell Atlantic Mobile Systems, Inc	Tentative Selectee
MD 3 Frederick	ICF Cellular Partners	Tentative Selectee
	Bell Atlantic Mobile Systems, Inc.	GCP 1/90

⁸ Ibid., p. 42.
GCP - Granted Construction Permit.

The following table lists the cellular service providers operating in Maryland and a total national population figure for each company which reflects all national markets controlled by that carrier as of March 15, 1990. Population figures are not fractionalized to reflect percent of ownership.⁹

<u>Cellular Providers</u>	<u>National Population Coverage</u>
Southwestern Bell Mobile Systems	28,544,640
Bell Atlantic Mobile Systems, Inc	16,369,467
Vanguard Cellular Systems, Inc.	5,074,015
Cellular Information Systems	1,183,971

It is important to note that the structure of any market has a significant influence on the way sellers behave in conducting their business. In general, since the wholesale cellular market is a duopoly as mandated by the FCC, it is unlikely that the number of firms will be a source of rivalry. Economic theory shows that in the case of a duopoly, each firm may realize it is better off by not engaging in competitive behavior. While there are only two wholesale cellular carriers, the provision for resale to end users is perceived as a means of providing competition in

⁹ Ibid., pp. 9-17.

the retail cellular market. Resellers are permitted to purchase bulk capacity from licensed carriers for repackaging and resale to the public. Resellers have full responsibility for servicing their customers' needs, including billing, maintenance, and customer service. "The FCC has encouraged resales because, as one official finding put it, they promote 'the evolution of a highly competitive secondary market for distribution of cellular **services.**'"¹⁰ "There are 100 to 150 resellers around the country who buy telephone numbers at wholesale prices from the two carriers and then resell them to the **public.**"¹¹ Some resellers are GTE and Motorola. There are no entry level restrictions or regulations for the resale of cellular service in Maryland. Resellers of cellular service in Maryland are not required to register with the MDPSC or the FCC. Therefore, it is difficult to determine the number of resellers actually operating in the Maryland market.

The retail market is composed of independent resellers and the retail arms of carriers. Carriers' agents serve the purpose of placing new customers on the system without the additional responsibilities incurred by resellers. Once an agent adds a new subscriber, his obligation ends. Sales

¹⁰ "Competitive Static Interferes with Cellular Phone Service", Insight, (November 6, 1989), p. 41.

¹¹ Ibid., p. 40.

agents function solely as a sales force. Also, it is possible for resellers to employ agents.

On August 21, 1990, Commission Staff performed an informal inspection of the retail cellular market in Baltimore, Maryland. Using the C&P Telephone Consumer Yellow Pages, Greater Baltimore Metropolitan Area, Suburban East Edition (November **1989-October 1990**), Staff contacted the firms listed under the headings of mobile telephone service and mobile telephone equipment and supplies. The two carriers, Bell Atlantic Mobile Systems (BAMS) and Cellular One (the cellular subsidiary of Southwestern Bell) were listed. In addition, two agents for BAMS and two agents for Cellular One were listed. From the informal inspection of the C&P Telephone Consumer Yellow Pages of Baltimore, it appears that the cellular service market in Baltimore is basically composed of the two carriers and their agents.

Staff also obtained information from the Hagerstown and Cumberland telephone directories. The Hagerstown directory listed Cellular One of Hagerstown (Vanguard Cellular Systems) and the Cumberland directory listed Cellular One of Cumberland (Cellular Information Services) as providing cellular telephone service in each of the respective regions. A reason which may explain why a second carrier was not listed is that, according to information supplied by

CTIA, as of Spring 1990, the second carrier's system in each region was not in operation.

C. Substitute Services

There exist many substitutes for **cellular** telephone service, such as conventional two-way **radio** telephone service and paging. Paging service may now offer complete alphanumeric messages scrolled across an electronic screen. Both paging and conventional two-way radio telephone service providers are not regulated in Maryland and appear to operate in a competitive market. In addition to conventional two-way radio telephone systems and paging, answering machines, voice mail, and public payphones allow access to telephone services when away from the home or office. Unquestionably, the degree of substitutability varies. However, lower usage and/or equipment costs may allow the substitutes to be viable alternatives for many consumers.

Cellular phones could eventually face a challenge from other forms of radio communications networks, or **PCNs**. "The FCC has granted a cellular telephone company experimental licenses for a new type of telephone network that will greatly expand the number of callers who can use cellular service simultaneously. **PCNs** are different from current cellular services in that they use high microwave frequencies, which have a shorter range. Because the

signals will not travel very far, the same frequency can be used on different floors of a skyscraper without causing interference. Current cellular systems rely on a few large radio towers to transmit signals in a radius of a few blocks to a few miles, while PCNs will rely on many low-powered transmitters that will transmit signals across a limited area. The new systems would be an alternative service to both existing cellular systems and also to local telephone service that relies on wires and fiber-optic cables."¹²

IV. REGULATION

A. HISTORY

Washington/Baltimore Cellular Telephone Company (WBC, the nonwireline carrier which was subsequently purchased by Southwestern Bell) began providing cellular service in Maryland in December 1983. BAMS began operation in April 1984. The MDPSC has previously recognized, that where competition exists, the need for rate regulation is reduced. In Order No. 66913 in Re Washington/Baltimore Cellular Telephone Company (1985), the commission stated that: "Although the Commission has jurisdiction over WBC's provision of cellular service to end users, the Commission determines that it is not necessary at this time to regulate

¹² "A Phone in Your Pocket? Tryout Set for New Service", The New York Times., Vol. CXXXIX, no. 48, 231, (May 10, 1990), p. A1.

the rates, terms and conditions of **WBC's** cellular service to end users because effective price competition most probably currently exists in the resale market and may become more vigorous, especially in light of the **Commission's** order issued this date with respect to resellers of cellular service. However, WBC must provide the Commission with informational copies of rates, terms and conditions by WBC to end users. Although the rates, terms and conditions of cellular services offered by WBC to end users will not be subject to the **Commission's** investigation or rate regulation at this time, they may be subject to the scrutiny of the Commission at any time upon the Commission's own motion or for good cause **shown."**

"During the period of time when -the MDPSC regulated cellular service, WBC provided mostly retail service directly to end users and BAMS provided only wholesale service to resellers. However, the parent company of BAMS was itself a reseller. Since the commission decided that it would not regulate retail rates, the reporting requirements applied to wholesale service only. Therefore, WBC reported the results of a small portion of its operations, while BAMS provided data on all of its **activities."**¹³

¹³ Reaulation of Radio Common Carriers in Maryland, MDPSC (July, 1987), pp. 45, 54.

At that time, the Commission also determined that it would not exercise jurisdiction over any provider that was neither (1) licensed by the FCC, nor (2) **affiliated** with an entity that was licensed by the **FCC**.¹⁴ Consequently, resellers and agents functioned on an unregulated basis.

B. CURRENT REGULATION

MARYLAND PUBLIC SERVICE COMMISSION

In 1987, following receipt of a report from the Commission's Technical Staff, and after receipt of written and oral comments at a public hearing, the Commission concluded that the radio common carrier industry was sufficiently competitive so that the protection of the public interest no longer required any form of Commission regulation and supervision. In particular, regarding cellular telephones the Commission noted that although there were only two carriers in that market it was a market characterized by elastic demand and competition from substitute services. During the 1988 **session** of the Maryland legislature, a bill was enacted and signed by the Governor, eliminating the jurisdiction and authority of the **MDPSC** to regulate radio common carriers, including cellular telephone companies. The statute deregulating cellular service is **codified** at Article 78, Sections 2(o) and (z) of The Public Service Commission Law.

¹⁴ MDPSC Order No. 66916, January 28, 1985, p. 3.

FEDERAL COMMUNICATIONS COMMISSION

"Cellular mobile telephone service requires radio frequencies. Under the Federal Communications Act, the FCC regulates frequencies on the theory that they are **a** scarce resource. The FCC, often deciding among competing applicants for the same frequencies, allocates groups of frequencies to different uses and then assigns frequencies within those groups to individual **parties**. Under these licensing powers, the FCC decides who may use each frequency for what type of communications, where, and when. The FCC **may** also impose technical regulations on the use of **frequencies and** on the equipment that transmits and receives communications on them. The statutory standard for FCC radio action is whatever would serve '**the** public interest, convenience, or **necessity**'.¹⁵ It should be emphasized that the FCC does not regulate cellular rates.

c. REGULATION BY OTHER STATES

The degree to which the states exercise jurisdiction over cellular carriers varies considerably. A summary table describing the extent of cellular service **regulation** is provided in Attachment A. This information was obtained from the Cellular Telecommunications Industry Association (CTIA) -State by State Regulatory Update.

¹⁵ "The Impact of Law and Regulation on Technology", p. 722.

Eleven states and Puerto Rico regulate cellular carriers. A state imposing full regulation requires cellular carriers to obtain a Certificate of Public Convenience and Necessity and file tariffs for both wholesale and retail levels. Thirteen states partially regulate cellular service. A state imposing partial regulation places regulatory requirements on wholesale and/or retail levels but does not completely regulate both levels simultaneously. Twenty-six states and the District of Columbia do not regulate cellular carriers. Deregulation signifies that cellular carriers are not required to obtain a Certificate of Public Convenience and Necessity or file tariffs of any type. Within the region served by the Bell Atlantic Corporation, Delaware, Maryland, New Jersey, Pennsylvania and Washington D.C. do not regulate cellular providers, Virginia partially regulates cellular, and only West Virginia maintains full regulation at the present time.

v. CONDUCT OF PROVIDERS OF CELLULAR TELEPHONE SERVICE

The conduct of firms in an industry consists of the tactics by which firms attract buyers and respond to each other's competitive behavior.

A. PRICING BEHAVIOR

In the cellular service market, there are two carriers providing basic wholesale service which may be resold directly by the carriers' retail arms or by agents of the carriers or by independent *resellers*. Price competition in the retail market can occur through the types of rate plans offered by the carriers, such as plans catering to corporate and high usage customers or to off-peak usage. In addition, the existence of large per unit volume discounts allows resellers to arbitrage. That is, a reseller can buy in high volumes at low per minute rates and then resell the service to smaller volume end-users at unit rates that are lower than those of the common carriers at comparable volumes. Thus both the resellers and the end use customers can be made better off because of the per unit volume discount offered by the carrier firm. Resellers may offer **services** at lower monthly fees and/or provide innovative rate packages.

Attachment B shows a price comparison for cellular service provided by **BAMS** to a single end-user in the Baltimore area for the years **1984** and **1990**. The price comparison includes the monthly subscription price as well as a rate schedule for calls made. This single comparison shows that rates have decreased from 1984 to 1990. Price comparisons are made difficult because rate plans have changed and cellular service quality and coverage have

improved. In addition, in 1984 optional services such as call forwarding, three-way calling, and call waiting were not available, whereas today they are offered by BAMS in Baltimore at no additional charge.

Attachment C is the rate plans offered by BAMS and the rate plans offered by Cellular One in the Baltimore area as of August 1990. The rate plans differ and rates for services by the two carriers are comparable but not identical. Attachment D is the rate plans offered by Cellular One of Hagerstown and Attachment E is the rate plans offered by Cellular One of Cumberland as of August 1990.

It should be noted that the cellular telephone equipment market is a unregulated competitive market. Prices of cellular telephone equipment have experienced dramatic price decreases.

Since a subscriber of cellular telephone service must have access to special equipment, some cellular dealers link the purchase of a telephone with the sign-up of service. Bundling is when firms sell related but separable products at a single package or "bundled" price. The equipment is often offered at a rebate to attract customers. The cellular resellers association filed a petition before the

FCC calling for an end to bundling. As of July, 1990 the FCC has not issued a decision on the petition.

B. NONPRICE COMPETITION

To the extent that end-users are persuaded that a provider's service is superior to that of the others, economic theory contends that the favored provider can raise **its** price somewhat without losing **customers**. This phenomenon is called product differentiation. Product differentiation is beneficial when it offers consumers a genuine choice of price and quality combination.

In the cellular telephone service market, there *is some* degree of service differentiation. Providers may compete through the reliability, availability, -and quality of service. For instance, **"in** their ads, cellular companies **make** much of their technological capabilities. Nynex Corp. **'s** Mobile Communications unit boasts that it has '25% more calling channels than anybody else,' making customers less likely to wait for a line. **McCaw** promotes its sophisticated integrated network, which **'hands** off calls seamlessly from one cell to the next' and prevents customers from being dropped in the middle of a **call.**"¹⁶

¹⁶ The Wall Street Journal, May 14, 1990, p. B1.

Marketing **may** also be used to differentiate the service. For example, advertising, promotional efforts, and billing methods may be used to differentiate the carriers' or resellers' service. Advertising serves to inform buyers about the available service and it may also stimulate demand. The providers may also use their own reputations as a means of **nonprice** competition. "Because they sell essentially similar equipment and service, cellular companies also are trying to stand out from one another by dishing up, distinctive enticements. Mr. Kalgoris (chief executive officer for Metrophone), for instance, says Metrophone offers free long-distance calling on weekends. Nynex Mobile Communications is offering free 'voice **mail**' - a phone message service-through the end of May. Until recently, Chicago based Ameritech gave away cellular telephones to any customer who signed a one-year service contract." "**One** of the biggest battles among Cellular phone companies is over signing up stores as exclusive distribution agents. With offers of hefty commissions or advertising and promotional support, they recruit such chains as Sears, Roebuck & Co. and R.H. **Macy & Co.** to hawk their cellular phone service to customers who buy cellular phones. As an exclusive distribution agent, a retailer receives a flat commission on every cellular telephone contract sold, whether it's for 60 days or 39 **months.**"¹⁷

¹⁷ Ibid.

Cellular service providers apply marketing techniques in the Maryland market. For example, in 1989, Owings Mills-based Pulse One Communications Inc., then a retailer of Bell Atlantic cellular phone equipment, launched a marketing campaign to attract new customers. Under the special plan, customers could buy a cellular phone by paying \$19.95 a month, with no down **payment.**"¹⁸

VI. PERFORMANCE OF PROVIDERS OF CELLULAR TELEPHONE SERVICE

The performance of the cellular telephone industry can be tested by applying several criteria. One criteria is profitability. Specifically, have the firms earned monopolistic, supernormal profits? This is difficult to determine because one must first establish the level of normal profit for that industry. Since the providers' rates are not regulated, the information to perform the analysis is not available. Have the firms adopted new technology? This appears to be the case. Service quality and coverage have improved. Has consumer demand been satisfied? Again this appears to be the case. The MDPSC no **longer acts** as the customer's forum of last resort for resolution of complaints. Rather, the deregulated market and the existing legal system ensure that the companies are making complaint

¹⁸ "Cellular Dealer Sues Bell Subsidiary over Recent Bankruptcy", The Baltimore Sun, April 19, 1990, p. 1E.

resolution mechanisms available and are taking steps necessary to provide customers with sufficient information to make informed choices about their service options.

VII. CONCLUSION - SHOULD CELLULAR TELEPHONE SERVICE PROVIDERS BE REGULATED BY THE MARYLAND PUBLIC SERVICE COMMISSION?

The cellular industry is generally characterized by duopoly at the wholesale level and by multiple providers at the retail level. The conclusion is that the service is furnished competitively, for the market structure is one that has been designed by the FCC to be competitive. Furthermore, over the long run, the FCC has the option to reconsider relaxing its limitation of two firms in the marketplace if capacity consideration warrants expansion. Additionally, the existence and/or the threat of entry of resellers operates to check duopoly abuses of the facilities-based carriers.

Economic regulation by the MDPSC tends to be limited to, with some exceptions, monopolistic situations in which a basic service aspect exists (i.e. telephone local exchange companies, **gas** utilities, electric utilities, water utilities). There is no absolute definition of a basic service. Generally, a basic service is one **for** which society deems it important for **all** citizens to have access to the service at reasonable rates. Because there are

substitutes for cellular service, it is not likely to be considered a basic service. Furthermore, one could argue that cellular service be defined as a basic service on the grounds it provides emergency service, but this argument ignores the fact that there are currently substitutes for this emergency service such as **paging** systems, public payphones, etc.

Since cellular service providers offer a service that is not now considered essential to most telephone users, and since there are or will be at least two competitors in each territory in which the service is provided, there appears to be little justification for regulating the industry. From 1984 through 1988, the extent of regulation exercised by the MDPSC was minimal. The primary beneficiary of regulation, the consuming public, received protection because wholesale rates were regulated and competition among retailers was permitted. Since 1988, both wholesale and retail rates have not been regulated. It appears that the Maryland market is functioning adequately given that on the wholesale level there exists an FCC mandated duopoly. Providers of cellular service may compete using price and **nonprice** competition. End use customers have the option to choose between various rate plans **for cellular** service or choose substitutes for cellular service. Furthermore, the majority of the states which have deregulated or vastly reduced regulation of

cellular service also supports the conclusion that regulation is not required to protect the public interest.

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CTIA State by State Regulatory Update

JUNE 1990
COMMISSION
OF MASSACHUSETTS

Cellular carriers are regulated, partially regulated, or not regulated. The extent of regulation depends on each state's cellular regulatory policies.

A regulated state requires cellular carriers to obtain a **Certificate of Public Convenience and Necessity (CPCN)** and file tariffs for both wholesale and retail levels.

A partially regulated state places regulatory requirements on wholesale and/or retail levels but does not **completely** regulate both levels simultaneously.

A state that is not regulated does not require cellular carriers to obtain **CPCNs** or file tariffs of any type.

Alabama

Not regulated

Law to deregulate cellular enacted on Feb. 21, 1990.

Alaska

Not regulated

RCCs regulated, but no cellular decision.

Arizona

Partially regulated

Wholesale level: requires CPCN
requires tariff

Retail level: does not require CPCN
does not require tariff

Arkansas

Regulated

Wholesale level: requires CPCN
requires tariff

Retail level: requires CPCN
requires tariff

California

Regulated

Wholesale level: requires CPCN
requires tariff

Retail level: requires CPCN
requires tariff

The California PUC issued its final decision on its cellular order instituting an investigation (OI) on

June 6, 1990. Among the requirements called for in the order are: 1) only rate reductions of 10 percent or less may be effective on the date filed; 2) rate increases may be made via an advice letter filing but must include cost-support data requested by the Commission staff; 3) LECs shall offer standard terms and conditions and negotiate cellular interconnection on that basis, although interconnection arrangements shall not be tariffed; 4) "large user" tariffs must be set at least 5 percent above wholesale rates.

Colorado

Not regulated

Connecticut

Partially regulated

Wholesale level: requires CPCN
requires tariff

Retail level: does not require CPCN
does not require tariff

The state will have full rate regulation on the wholesale level for the first 18 months in which both cellular carriers are operating. After that point, the degree and extent of on-going rate regulation will be reviewed.

Delaware

Not regulated

District of Columbia

Not regulated

Florida

Not regulated

Georgia
Not regulated

Hawaii
Regulated
Wholesale level: requires CPCN
requires tariff
Retail level: requires CPCN
requires tariff

Idaho
Partially regulated
Wholesale level: does not require CPCN
does not require tariff
Retail level: does not require CPCN
does not require tariff
Detariffed: PUC requires filing of financial statement. PUC can re-invoke tariff filing requirement.

Illinois
Partially Regulated
Wholesale **level:** requires CPCN
requires tariff
Retail level: does not require CPCN
does not require tariff

Indiana
Not regulated
Only remaining regulatory oversight is “stream-lined” **certification.**

Iowa
Not regulated

Kansas
Not regulated

Kentucky
Partially regulated
Wholesale level: requires CPCN
requires tariff
Retail level: does not require CPCN
does not require tariff
A CPCN must be filed with the PSC for each cell site.

Louisiana
Regulated
Wholesale **level:** requires CPCN
requires tariff
Retail level: requires CPCN
requires tariff

Maine
Regulated
Wholesale **level:** requires CPCN
requires tariff
Retail level: requires CPCN
requires tariff
Flexible rates allow reduction to 0 or increase of 20 percent within seven-days **notice.**

Maryland
Not regulated

Massachusetts
Regulated
Wholesale **level:** requires CPCN
requires tariff
Retail level: requires CPCN
requires tariff

Michigan
Not regulated

Minnesota
Not regulated

Mississippi
Regulated
Wholesale **level:** requires CPCN
requires tariff
Retail level: requires CPCN
requires tariff

Missouri
Not regulated

Montana
Not regulated

Nebraska
Not regulated